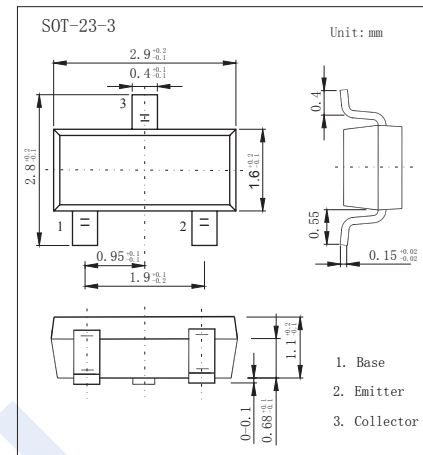


## NPN Transistors

### 2SD814A-HF

#### ■ Features

- High collector to emitter voltage  $V_{CEO}$ .
- Low noise voltage NV.
- Complimentary to 2SB792A-HF
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	185	V
Collector - Emitter Voltage	$V_{CE0}$	185	
Emitter - Base Voltage	$V_{EB0}$	5	
Collector Current - Continuous	$I_C$	50	mA
Collector Current - Pulse	$I_{CP}$	100	
Collector Power Dissipation	$P_C$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_C = 100 \mu\text{A}$ , $I_E = 0$	185			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_C = 1 \text{mA}$ , $I_B = 0$	185			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu\text{A}$ , $I_C = 0$	5			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = 120 \text{V}$ , $I_E = 0$			100	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 4 \text{V}$ , $I_C = 0$			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 30 \text{mA}$ , $I_B = 3 \text{mA}$			1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 30 \text{mA}$ , $I_B = 3 \text{mA}$			1.2	
DC current gain	$h_{FE}$	$V_{CE} = 5 \text{V}$ , $I_C = 10 \text{mA}$	90		330	
Noise voltage	NV	$V_{CE} = 10 \text{V}$ , $I_C = 1 \text{mA}$ , $G_v = 80 \text{dB}$ $R_g = 100 \text{k}\Omega$ , Function = FLAT		150		mV
Collector output capacitance	$C_{ob}$	$V_{CB} = 10 \text{V}$ , $I_E = 0$ , $f = 1 \text{MHz}$		2.3		pF
Transition frequency	$f_T$	$V_{CE} = 10 \text{V}$ , $I_E = -10 \text{mA}$ , $f = 200 \text{MHz}$		150		MHz

#### ■ Classification of $h_{FE}$

Type	2SD814A-Q-HF	2SD814A-R-HF	2SD814A-S-HF
Range	90-155	130-220	185-330
Marking	LQ <sub>F</sub>	LR <sub>F</sub>	LS <sub>F</sub>

## NPN Transistors

### 2SD814A-HF

■ Typical Characteristics

